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EXAMINER	
ODOM, CURTIS B	

ART UNIT	PAPER NUMBER
2634	6

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/498,893	GRONEMEYER, STEVEN A.	
	Examiner	Art Unit	
	Curtis B. Odom	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 February 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3, 5-12, 14,15, 17-24, 26-42, and 44* is/are rejected.

7)☒ Claim(s) *4,13,16,25 and 43* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 February 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ ~~Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)~~ Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 17-21 objected to because of the following informalities: The phrase "claim 13" is suggested to be changed to the phrase "claim 15". Appropriate correction is required.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 30-38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 30-38 are directed towards a data signal. Note this data signal merely consists of "1" and "0" to represent the coded signal. It does not fall under the category or a method, apparatus, product, or composition of matter. Therefore, the claims are rejected under 35 U.S.C 101 for being directed toward non-statutory subject matter.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 5, 6, 8-10, 12, 23, 24, 26, 27, and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Cahn et al. (U.S. Patent No. 6, 198, 765).

Regarding claim 1, Cahn et al. discloses a system (Fig. 5) for processing communication data from a code signal input (C/A codes), the system comprising:

a signal sampler (Fig. 3, block 73, column 11, lines 26-39) operable to receive signal data;

a Doppler shift system (Figs. 5, 6 and 9, block 108, column 17, lines 1-40 and column 18, lines 55-67) operable to provide a Doppler shift correction value;

a time domain signal processor (Fig. 5, block 102, column 15, lines 36-60) in signal communication with the signal sampler, the Doppler shift system and the code signal input, the time domain signal processor operable to shift the signal by the Doppler shift correction value and to determine a correlation between the shifted signal and the code signal input (C/A codes).

Regarding claim 2, which inherits the limitations of claim 1, Cahn et al. discloses the code signal input is a CDMA signal (column 15, lines 36-60), wherein C/A codes are CDMA signals.

Regarding claim 5, which inherits the limitations of claim 1, Cahn et al. discloses the Doppler shift system further comprises a Doppler shift generator (Fig. 6, block 108, column 17, lines 1-25).

Regarding claim 6, which inherits the limitations of claim 1, Cahn et al. discloses the Doppler shift system further comprises a lookup table with stored precomputed Doppler shift correction values (Fig. 9, block 105, column 17, lines 26-40).

Regarding claim 8, which inherits the limitations of claim 1, Cahn et al. discloses the signal sampler receives the signal data from a radio frequency receiver (column 1, lines 24-40 and column 4, lines 59-67), wherein a GPS receiver is a radio frequency receiver.

Regarding claim 9, Cahn et al. discloses a method for processing communication data comprising:

receiving (Fig. 3, element 72) signal data;

applying (Figs. 5, 6 and 9, block 108, column 17, lines 1-40 and column 18, lines 55-67) a Doppler shift correction value to the signal data;

receiving (column 15, lines 44-60) a code signal, wherein code signals are received from the coder block 112; and

determining (column 15, lines 44-60) a correlation between the Doppler shifted signal data and the code signal in a time domain.

Regarding claim 10, which inherits the limitations of claim 9, Cahn et al. discloses applying a Doppler shift correction value to the signal data comprises complex mixing at least a portion of the signal data with Doppler shift correction value (Fig. 6, block 132, column 16, line 55-column 17, line 25), wherein the Doppler multiplier mixes the complex signals with the Doppler shift correction value.

Regarding claim 12, which inherits the limitations of claim 9, Cahn et al. discloses receiving the Doppler shift correction value from a lookup table (column 17, lines 26-40) and

complex mixing at least a portion of the signal data with the Doppler shift correction value (Fig. 6, block 132, column 16, line 55-column 17, line 25), wherein the Doppler multiplier mixes the complex signals with the Doppler shift correction value.

Regarding claims 22, 23, 26, 27, and 29, the claimed apparatus included features corresponding to the above rejection of claims 1, 2, 5, 6, and 8 which is applicable hereto.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 3, 7, 11, 14, 15, 17-21, 24 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cahn et al. (U.S. Patent No. 6, 198, 765).

Regarding claim 3, which inherits the limitations of claim 1, Cahn et al. does not disclose the time domain signal processor is a matched filter processor. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a matched filter processor could have been implemented to perform the same functions as the time domain processor of Cahn et al. Thus, implementing the time domain processor as a matched filter processor is deemed a design choice and does not constitute patentability.

Regarding claim 7, which inherits the limitations of claim 1, Cahn et al. does not disclose the Doppler shift system is coupled to the time domain signal processor by a data bus. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a bus is used to communicate signals or messages between different components of a device. Thus, implementing a bus to couple the Doppler shift system to the time domain signal processor is deemed a design choice and does not constitute patentability.

Regarding claim 11, which inherits, the limitations of claim 9, Cahn et al. discloses receiving the Doppler shift correction value and complex mixing at least a portion of the signal data with the Doppler shift correction value (Figs. 5, 6 and 9, block 108, column 16, line 55-column 17, line 40).

Cahn et al. does not disclose receiving the Doppler shift correction value over a data bus. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a bus is used to communicate signals or messages between different components of a device. Thus, implementing a bus to transport the Doppler shift correction value is deemed a design choice and does not constitute patentability.

Regarding claim 14, which inherits the limitations of claim 9, Cahn et al. does not disclose the correlation between the Doppler shifted signal data and the code signal comprises processing the Doppler shifted signal data and the code signal with a matched filter processor. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a matched filter processor could have been implemented to perform the same functions as the time domain processor (Fig. 5, block 102) of Cahn et al. Thus, implementing

the time domain processor as a matched filter processor is deemed a design choice and does not constitute patentability.

Regarding claim 15, Cahn et al. discloses a system (Fig. 5) for processing radio frequency data comprsing:

a signal sample receiver (Fig. 3, block 73, column 11, lines 26-39) operable to receive signal data;

a Doppler shift corrector (Figs. 5, 6 and 9, block 108, column 17, lines 1-40 and column 18, lines 55-67) operable to provide a Doppler shift correction value;

a code signal receiver (Fig. 5, block 110, column 15, lines 44-60) operable to receive a code signal;

a processor (Fig. 5, block 102, column 15, lines 36-60) coupled to the signal sample receiver, the Doppler shift corrector, and the code signal receiver, the processor operable to apply the Doppler shift correction value to the signal data and to determine a correlation between the Doppler shifted signal and the code signal (C/A codes).

Cahn et al. does not disclose a signal processor coupled to the signal sample receiver , the signal processor operable to process signal data to extract encoded data. However, Cahn et al. does disclose a CPU which receives the output from the processor to further process the signal (Fig. 9, block 101). Therefore, it would have been obvious to one of ordinary skill in the art that the CPU could have contained a device such as a decoder to extract encoded data from the signal. Extracting encoded data from a signal for processing is well know in the art. Thus, claim 15 does not constitute patentability.

Regarding claims 17-19, which is assumed inherit the limitations of claim 15 Cahn et al. does not disclose implementing the system in a computer code on a computing processor of a CDMA receiver, implementing the system on a semiconductor device, or implementing the system in an application-specific integrated circuit. However, it would have obvious to one of ordinary skill in the art at the time the invention was made that device or Cahn et al. would perform the same function no matter where the device is implemented. Thus, implementing the device on different platforms is deemed a design choice and does not constitute patentability.

Regarding claim 20, which is assumed inherits the limitations of claim 15, Cahn et al. discloses the processor is a time domain signal processor (column 15, lines 44-60).

Regarding claim 21, which is assumed inherits the limitations of claim 15, Cahn et al. does not disclose the processor is a frequency domain processor. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a frequency domain processor could have been implemented in place of the time domain processor in order to process the signal in the frequency domain. The results would be the same except the operation would be performed in the frequency domain. Thus, claim 21, does not constitute patentability.

Regarding claims 24 and 28, the claimed apparatus includes features corresponding to the above rejection of claims 3 and 7 which is applicable hereto.

8. Claims 39-42 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cahn et al. (U. S. Patent No. 6, 198, 765) in view of Langberg et al. (U.S. Patent No. 5, 852, 630).

Cahn et al. discloses all of the subject matter as described in the previous rejection (see rejection of claims 9-12 and 14) except for the method written as a computer program product with a computer readable storage medium.

However, Langberg et al. teaches that the method and apparatus for a transceiver warm start activation procedure with precoding can be implemented in software stored in a computer-readable medium. The computer readable medium is an electronic, magnetic, optical, or other physical device or means that can contain or store a computer program for use by or in connection with a computer-related system or method (note column 3, lines 51-65). One skilled in the art at the time the invention was made would have clearly recognized that the method of Cahn et al. would have been implemented into software. The implemented software would perform the same function of the hardware for less expense, greater adaptability, and greater flexibility. Therefore, it would have been obvious to have used the software in Cahn et al. as taught by Langberg et al. in order to reduce cost and improve the adaptability and flexibility of the communication system.

Allowable Subject Matter

9. Claims 4, 13, 16, 25, and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Harrison et al. (U. S. Patent No. 6, 151, 353) discloses correlation a Doppler shifted signal with a code input in a radio frequency receiver.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 703-305-4097. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Curtis Odom
April 22, 2004

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